



Atty. Docket No.: 2973-2

UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Surya Raghu et al

Serial No. 09/602,018

Group Art Unit 3752

Filed: June 23, 2000

Examiner C. Kim

For: SPA TUB FLUIDIC NOZZLES

#14/Brief
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APPEAL BRIEF TRANSMITTAL

Hon. Commissioner of Patents and Trademarks
Washington, D. C. 20231

Sir:

Attached hereto are three (3) copies of the BRIEF ON APPEAL for the above-identified application.

Also attached is our check in the amount of \$160.00, small-
entity, in payment of the brief fee as provided by 37 C.F.R.
1.17(f). Any additional fees necessary to effect the proper and
timely filing of this Brief may be charged to Deposit Account No.
26-0090.

Petition is hereby made to the Commissioner of Patents and
Trademarks to extend the period for filing this Brief on Appeal for
one month, so as to expire June 28, 2002. A check in the amount of
\$55.00 for this extension is attached.

Respectfully submitted,

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Date: June 28, 2002

In the event this paper is deemed not timely filed,
the applicant hereby petitions for an appropriate
extension of time. The fee for this extension may
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with any other additional fees which may be
required with respect to this paper.

Atty. Docket No.: 2073-Z
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



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BRIEF ON APPEAL

Hon. Commissioner of Patents & Trademarks
Washington, D. C. 20231

Sir:

This is an appeal from the final rejection of Claims 1 - 5 of the above-identified application. Claim 6 has been allowed.

I. The Real Party in Interest

The real party in interest is Bowles Fluidics Corporation.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

Claims 1 - 5 were finally rejected. Claim 6 was allowed in an Advisory Action mailed April 16, 2002.

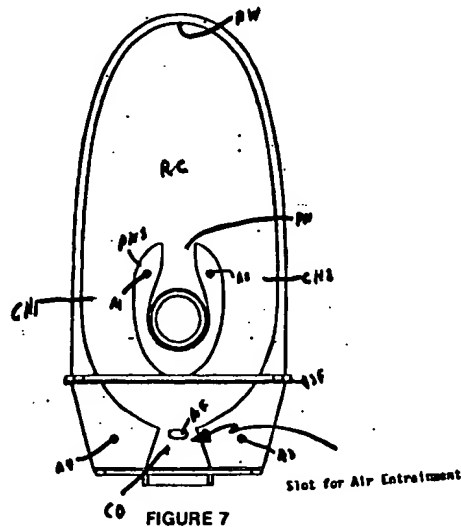
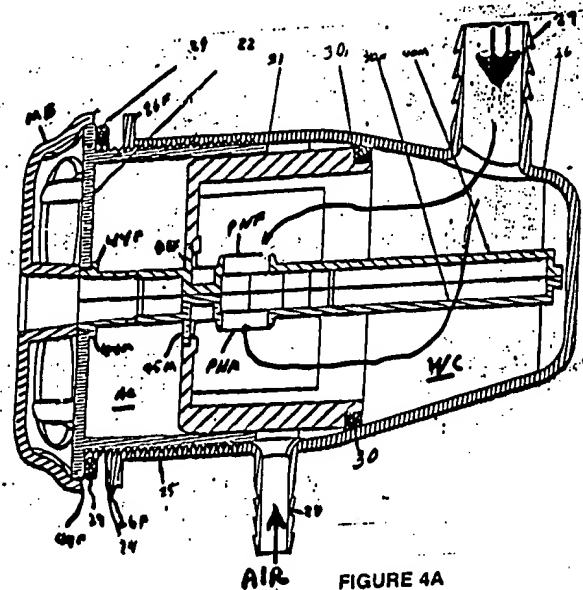
IV. Status of the Amendments

The amendment filed March 1, 2002 was originally denied entry by the Examiner, but in response to the Petition to Enter Amendment

Under 37 C.F.R. §1.111 filed March 28, 2002, the amendment was entered resulting in allowance of Claim 6. Claims 1 - 5 remain rejected.

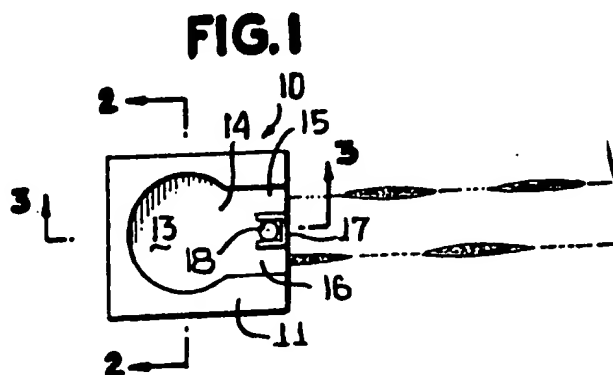
V. Summary of the Invention

The invention is directed to a therapeutic spa tub having one or more nozzles for issuing jets of water into the tub. The nozzles comprise fluidic oscillators of a particular configuration. We have reproduced Figures 4A and 7 in reduced form below for convenience:



The nozzle is mounted in the wall of a tub between flanges 26F, and an O-ring provides a seal. WC is a water chamber, and water is introduced through pipe 27 into the water chamber WC, and air is introduced through air inlet 28 through passages (not shown in Figure 4A) to air chamber AC and then through air slot AS to be aspirated by the jet of water. As noted earlier, the nozzles are mounted below the waterline so that it results in submerged operation.

The fluidic oscillator *per se* is of the reversing-chamber type (see Figure 7) having a reversing chamber RC and a reversing wall RW. The detailed explanation of the operation of reversing chamber oscillator is given in the Bauer Patent No. 4,184,636 (Reissue Patent No. RE33,605). Bauer '636 describes the output of the oscillator shown in Bauer's '636 patent Figure 1 as alternating slugs of fluid issuing from passages 15 and 16:



In the case of the present invention, these slugs of fluid (water) are the same as the pair of periodically pulsating pulses of water, these alternating pulses of water are conveyed by water

passages CH1 and CH2 from the reversing chamber on each side of the power nozzle.

These outlet passages or channels CH1 and CH2 are preferably smooth without any sharp directional changes and extend to intersect at a common outlet CO which has a pair of diverging sidewalls SW1 and SW2, respectively. Each outlet passage CH1 and CH2 has an upstream end beginning at the reversing chamber and a downstream end ending at the common outlet CO. Each of these outlet passages have the effect of lowering the frequency of oscillation to under 6 Hz, and in the preferred embodiment to about 3 Hz to less."
(See first paragraph of page 6 of the specification.)

Air from air chamber AC is entrained through apertures AM and AF in the common outlet throat CO. Advantageously, this type of arrangement has better packageability for spa applications in that the length of the reversing chamber can be manipulated earlier than the length of feedback channels or the feed configurations in other type oscillators. The low frequency of oscillation is therapeutic in that it provides therapeutic effect of the large muscle groups in the back and provides a more soothing massaging effect.

VI. Issues

1. Was the Examiner correct in rejecting Claims 1 - 5 under 35 U.S.C. §112, first paragraph, as containing subject matter which is not described in the specification in such a way to enable one skilled in the art to which it pertains or with which it is most nearly connected to make or use the invention, the Examiner contending that the specification does not disclose how the passages are "angulated"?

2. Was the Examiner correct in rejecting Claims 1 - 6 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention? Except for the term "smoothly," applicant believes that the claims have been amended to avoid this ground of rejection, and the rejection regarding the term "smoothly" is traversed.

3. Was the Examiner correct in rejecting Claims 1 - 5 under 35 U.S.C. §103(a) as being unpatentable over Bauer U.S. Patent No. 4,662,568 in view of Fichter U.S. Patent No. 3,776,460?

VII. Grouping of Claims

The claims stand or fall together.

VIII. Argument

I. The 35 U.S.C. §112, first paragraph rejection.

Initially, it is noted that the term "angulated" has been deleted from Claim 2. The Examiner contends that the specification does not disclose how the passages are angulated. Reference is made to the specification in the paragraph pages 5 and 6 reading as follows:

A pair of water passages CH1 and CH2 lead from the reversing or interaction chamber RC on each side of the power nozzle PN, respectively. These outlet passages or channels CH1 and CH2 are preferably smooth without any sharp directional changes and extend to intersect at a common outlet CO which has a pair of diverging sidewalls SW1 and SW2, respectively. Each outlet passage CH1 and CH2 have an upstream end beginning at the reversing

chamber and a downstream end ending at the common outlet CO. Each of these outlet passages have the effect of lowering the frequency of oscillation to under 6 Hz, and in the preferred embodiment about 3 Hz or less.

As shown in Figure 7 of the drawings, reproduced above, the channels CH1 and CH2 smoothly extend from the reversing chamber RC to the common outlet CO where they intersect to merge or produce a second liquid jet which is periodically swept in the common outlet CO to ambient water in the spa tub. Figure 7 is an actual drawing of an operative device, and hence the drawing discloses a proper angulation to achieve the objective sought, e.g. the merging or intersecting of the alternately pulsating jets in the channels CH1 and CH2. They merge to produce a second liquid jet (the first liquid jet being the jet issuing through the power nozzle P). Hence, the specification and drawings disclose the proper angulation to achieve the objective sought. Appellants respectfully submit the disclosure is sufficient under 35 U.S.C. §112, first paragraph, as containing subject matter which is enable one skilled in the art to produce the invention defined by the claims.

II. The term "smoothly".

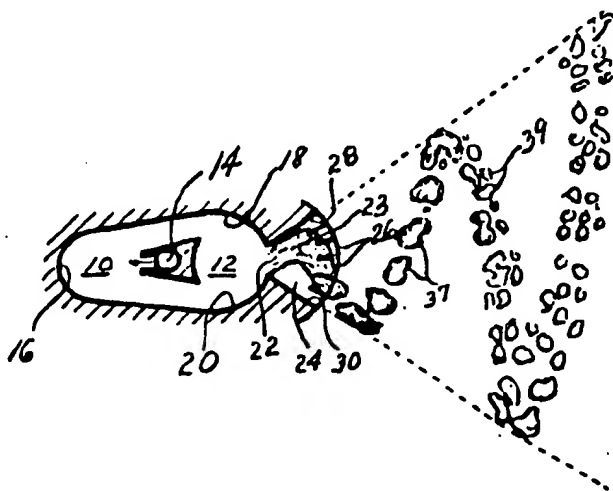
Turning now to the Examiner's objection to the term "smoothly" in claims 2 and 5, reference is again made to Figure 7 of the drawings and the above quoted portion of the specification. The specification characterizes the passages or channels CH1, CH2 as being "smooth without any sharp directional changes" (emphasis

added), and that is precisely what is disclosed in the drawings. And in contrast, the same cannot be said of Bauer Patent No. 4,662,568 which provides a spray output forming chamber. The Bauer device obviously has a sharp directional change in the form of the sharp points at the ends of his power nozzle 14 bounding spray forming chamber 12.

III. The rejection of Claims 1 - 5 under 35 U.S.C. §103.

The rejection of Claims 1 - 5 under 35 U.S.C. §103(a) as being unpatentable over Bauer (US 4,662,568) in view of Fichter (US 3,776,460) is in error.

In the first place, the Examiner's contention that Bauer discloses a therapeutic water nozzle is not understood because Bauer '568 never refers to or characterizes his spray nozzle as being therapeutic. Nevertheless, applicant respectfully submits that Bauer '568 is inapplicable to the claims because Bauer '568 is not an underwater jet device. Figure 1 of Bauer is reproduced as follows for convenience of reference:



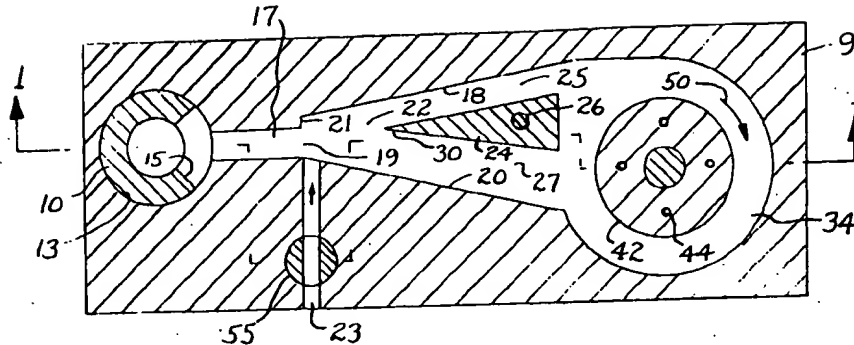
Bauer '568 seeks to break up the jet for spray nozzle applications by providing:

...various surface configurations within a chamber to stress the liquid flow therein whereby the liquid issues from the nozzle as individual drops of liquid in a stressed state so as to further break up into smaller droplets after leaving the nozzle.
(See Bauer Abstract, emphasis added.)

The very objective of applicants' device is to provide an underwater therapeutic massaging effect. This is not achieved in any manner, fashion or form by the provision of a device which is intended to break up into individual drops of liquid (and the Examiner has yet to explain why drops of liquid are going to be formed under water) and the individual drops are in a stressed state "so as to further break up into smaller drops after leaving the nozzle." [Break up into smaller drops after leaving the nozzle, under water?] Clearly, the intent and purpose of the Bauer device is to break the droplets up in ambient air and not under water.

Fichter is directed to a spray nozzle using a swirl chamber in such a fashion as to periodically disrupt the whirling action and alternate spray pattern discharged through the exit port. Fichter's Figure 2 is reproduced as follows for convenience of reference:

FIG. 2



Note that the fluidic switch in the swirl chamber of Fichter provides a conical discharge spray that oscillates rapidly between the wide angle cone pattern and the narrow angle cone pattern at an oscillating frequency of about 200 cycles per minute. (See column 1, lines 56-61.) The device is intended to provide a spray as in spray nozzle, and while it says it is useful in whirlpool baths, it does not indicate that it is useful in spa nozzles.

The structure of the Fichter device is basically unrelated to applicants' physical structure, and, as discussed above, the Bauer device is a jet break-up device for spray nozzle applications in which the idea is to provide a device which breaks the liquid jet from the nozzle into individual drops within a short distance from the nozzle, and the individual drops are further broken up into smaller drops shortly after leaving the nozzle. It is not clear how one would form droplets under water or why one would want to form droplets under water.

CONCLUSION

In conclusion, the Examiner erred in rejecting Claims 1 - 5, and the Examiner's rejection should be reversed.

Respectfully submitted,

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Attachment: APPENDIX (Claims on appeal)

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Date: June 28, 2002

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APPENDIX

1. (Twice Amended) A therapeutic spa tub having a waterline and one or more therapeutic water nozzles for issuing jets of water into said tub, said one or more therapeutic water nozzles each comprising a housing having an inlet for receiving a flow of water under pressure, a fluidic oscillator having an oscillation chamber and a power nozzle coupled to said inlet and said oscillation chamber for projecting a first jet of water into said oscillation chamber, a common outlet, a pair of outlet passages from said oscillation chamber for issuing a pair of periodically pulsating pulses of water into said spa tub below said waterline, and an air passage in said common outlet for selectively entraining ambient air in water passing through said common outlet.

2. (Twice Amended) The therapeutic spa tub defined in Claim 1 wherein said fluidic oscillator is a reversing chamber oscillator and wherein said oscillation chamber has a reversing wall, said power nozzle being centrally located for issuing said first jet of said water toward said reversing wall, said common outlet located below said waterline and a pair of liquid outlet passages leading from said reversing chamber on each side of said power nozzle, respectively, to said common outlet for carrying said periodically pulsating pulses of said water and wherein said outlet passages are smoothly extended to intersect at said common outlet to ambient and water from said liquid outlet passages merge to form a low-frequency swept jet, and said passages are merged to establish the sweep angle of a second liquid jet which is periodically swept in said common outlet to ambient water in said spa tub.

3. (Amended) The therapeutic spa tub defined in Claim 2 wherein said pair of outlet passages have an upstream end at said reversing chamber and downstream end at said common outlet, each

said passage having an outer wall which, with said reversing wall, define an oval.

4. The invention defined in Claim 3 wherein said common outlet has a pair of sidewalls which diverge in a downstream direction towards said ambient.

5. (Twice Amended) A therapeutic spa tub having a waterline and one or more therapeutic water nozzles for issuing jets of water into said tub, said water nozzles each comprising a housing having an inlet for receiving a flow of water under pressure, a fluidic oscillator having an oscillation chamber and a power nozzle coupled to said inlet and said oscillation chamber for projecting a first jet of water into said oscillation chamber and a pair of outlets from said oscillation chamber for issuing a pulsating jet of water into said spa tub below said waterline, said fluidic oscillator is a reversing chamber oscillator and wherein said oscillation chamber has a reversing wall, said power nozzle being centrally located for issuing said first jet of said water toward said reversing wall, a common outlet, and said pair of outlets being constituted by a pair of liquid passages leading from said reversing chamber on each side of said power nozzle, respectively, for alternately carrying periodic pulses of said water and wherein said liquid passages are smoothly extended to intersect at said common outlet to ambient and water from said passages merge to form a low-frequency swept water jet below said waterline.